Answers

1. Numbers

1.1 Whole numbers

1. Check point

(a) Millions

(b) Hundreds of millions

Stretch point

6: hundreds of millions
2: tens of millions
2: millions
1: hundreds of thousands
6: tens of thousands
9: thousands
3: hundreds
0: tens
3: ones

2. Check point: 4 000 000 and 7 000

Stretch point:1 600

3. Check point: 4 973 101

Stretch point: 2 309 382

4. Check point: One million, one hundred and ten thousand, three hundred

Stretch point:

Jima Bank	*Date*: 23-11-2020
Pay **Kizito**	KSh. **3 115 000**
Kenya shillings **Three million, one hundred and fifteen thousand** *only*	

5. Check point: 300 000 000 **Stretch point:** 27 741 740

6. Check point: 46, 32, 94, 100 **Stretch point:** Even

7. Check point: 413 999 **Stretch point:** 25

8. Check point: 8 389 **Stretch point:** 23 and 29, sum = 52

9. Check point: 5 622 **Stretch point:** 8 245 litres

10. Check point: KSh 745 200 **Stretch point:** 2 280

11. Check point: 15 **Stretch point:** 19 trees

12. Check point: 73 **Stretch point:** Ksh 1 500

13. Check point: 9, 11 **Stretch point:** 5,000 litres

1.2 Factors

1. Check point: 234, 38 190, 659 052 **Stretch point:** 1

2. Check point: 33, 45, 57,78 **Stretch point:** not divisible by 2

3. Check point: 2 644, 3 468 **Stretch point:** 840, 300

4. Check point: 35, 60, 90 **Stretch point:** 2

5. Check point: 72, 30, 48 **Stretch point:** 2

6. Check point: 8 208, 49 736 **Stretch point:** 9 560, 97 480

7. Check point: 7 353, 189 756 **Stretch point:** 55 359 ÷ 9 = 6 151

8. Check point: 120, 350, 650 **Stretch point:** 30, 1 250

9. Check point: 1 320, 691 570 **Stretch point:** 121

10. Check point: 210 = 2 × 3 × 5 × 7 **Stretch point:** 105 = 3 × 5 × 7

11. Check point: 6 **Stretch point:** 5

12. Check point: 24 **Stretch point:** 24 seconds

1.3 Fractions

1. Check point: (a) $2\frac{1}{3}$, $2\frac{2}{7}$, $1\frac{3}{5}$, $1\frac{5}{6}$ **(b)** Ginger

Stretch point: $\frac{2}{5}$, $\frac{3}{4}$, $\frac{1}{3}$, $\frac{1}{2}$

2. Check point: $\frac{3}{8}$ **Stretch point:** $\frac{3}{4}$, Terer ($\frac{2}{4}$)

3. Check point: $\frac{5}{6}$ **Stretch point:** $\frac{59}{60}$

4. Check point: $6\frac{1}{4}$ **Stretch point:** $10\frac{1}{6}$

5. Check point: $\frac{4}{7}$ **Stretch point:** $\frac{2}{6}$, 2

6. Check point: $\frac{3}{10}$ **Stretch point:** $\frac{5}{6}$ is bigger. $\frac{3}{12}$ ($\frac{1}{4}$)

7. Check point: $8\frac{11}{20}$ m **Stretch point:** $30\frac{9}{20}$

8. Check point: Ksh. 450 **Stretch point:** 8 cups

9. Check point: $\frac{1}{4}$ of an acre **Stretch point:** $\frac{3}{8}$ km

10. Check point: $4\frac{1}{8}$ litres **Stretch point:** $4\frac{1}{8}$ m²

1.4 Decimals

1. Check point: (a) (i) 0.1 **(ii)** 0.02 **(b)** 120 kg

Stretch point: Darlene

2. Check point: 0.9 **Stretch point:** 3.83

3. Check point: $\frac{239}{10}$ **Stretch point:** $128\frac{6}{10}$

4. Check point: 6.34859

3: tenths

4: hundredths

8: thousandths

5: tens of thousandths

9: hundred thousandths

Stretch point:

(a) 0.6 – tenths **(b)** hundredths

(c) thousandths **(d)** ten thousandths

(e) hundred thousandths **(f)** hundredths

5. Check point: 1.1, 9.5, 9.9, 10.0, 18.71

Stretch point: 13.101,13.121,13.210,13.211

6. Check point: 2.403, 2.345, 2.344, 2.043

Stretch point: 16.15, 16.12, 15.21, 15.01 sum of 16.15 and 15.01 = 31.16

7. Check point: (a) KSh. 1 325 **(b)** KSh. 1 330 **(c)** KSh. 1 300

Stretch point: 3.568 kg

8. Check point: $\frac{1}{4}$ l **Stretch point:** $\frac{9}{10}$ m

9. Check point: 0.45, 27 minutes **Stretch point:** 0.125kg

10. Check point: 52% **Stretch point:** 60%

11. Check point: 0.02, 0.00009 **Stretch point:** 0.8, 0.06

12. Check point: 2.272 kg **Stretch point:** 108.6561 litres

13. Check point: 41.1110 litres **Stretch point:** 106.272 litres

14. Check point: 12.19 kg **Stretch point:** 7.5 litres

15. Check point: 12.8litres **Stretch point:** 42.54952 m^2

16. Check point: 1.318 litres **Stretch point:** 5.064 kg

17. Check point: 7 kwh **Stretch point:** 14 dresses

18. Check point: 0.33, 3 **Stretch point:** 0.3

19. Check point: (a) 1.2 **(b)** 1.25

Stretch point: (a) 0.04(2 s.f) **(b)** 0.044(3s.f)

20. Check point: 1.8×10^4 , 4.92×10^{-3}

Stretch point: (a) 2.69×10^4 **(b)** 7.34×10^{-4}

1.5 Indices and logarithms

1. Check point: $100 = 10^2$ **Stretch point:** 10^5

2. Check point: $2048 = 2^{12}$ **Stretch point:** $512 = 2^{10}$

3. Check point: 2^5 **Stretch point:** 4^3

4. Check point 3^6 **Stretch point:** 6^{11}

5. Check point: 4^5 **Stretch point:** 5^3

6. Check point: 3^3 **Stretch point:**: 3^6

7. Check point: 4^2 **Stretch point:** 10^6

8. Check point: 5^4 **Stretch point:** 10^3 watts

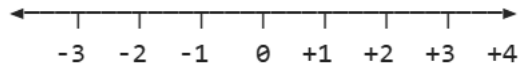
9. Check point: 10^6, 6 **Stretch point:** 10^4, 4

10. Check point: x = 729 **Stretch point:** 3

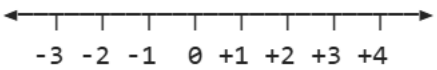
1.6 Integers

1. Check point: 6, -13 **Stretch point:** +3, -1

2. Check point:



Stretch point:



3. Check point: (a) -1 **(b)** -5

Stretch point: (a) -1 **(b)** +3

4. Check point: KSh. 554 **Stretch point:** -740

5. Check point: 8°C **Stretch point:** KSh. 450

6. Check point: (a) +3 **(b)** +5 **(c)** -2 **(d)** -7

Stretch point: 3^0C

7. Check point: 17 litres **Stretch point:** KSh.23900

1.7 Rates, ratio, proportion and percentages

1. Check point: KSh. 400 **Stretch point:** 70 km/h

2. Check point: 50 litres per hour **Stretch point:** 500 reams per hour

3. Check point: 1:3 **Stretch point:** 4:3

4. Check point: 3:5 was greater than 1:3 and 1:4

Stretch point: Alis

5. Check point: 90,54 and 36 **Stretch point:** 54^{o}, 90^{o}, 36^{o}

6. Check point: 2:3 **Stretch point:** 9litres

7. Check point: 16 cm **Stretch point:** 4:3

8. Check point: 9 m **Stretch point:** 2:3

9. Check point: $18^{o}C$ **Stretch point:** 20%

10. Check point: $19^{o}C$ **Stretch point:** $\frac{200}{9} = 22\frac{2}{9}\%$

11. Check point: (a) Direct **(b)** Indirect

Stretch point: Direct

12. Check point: 200 bags **Stretch point:** 600 km

13. Check point: 3 days **Stretch point:** 60 minutes

1.8 Square and square roots

1. Check point: 169 m^2 **Stretch point:** 400 cm^2

2. Check point: $22\frac{9}{16}$ cm^2 **Stretch point:** $27\frac{9}{16}$ m^2

3. Check point: 1.44 m^2 **Stretch point:** 106.09 m^2

4. Check point: 16 cm **Stretch point:** 17.436 cm

5. Check point: $\frac{5}{2} = 2\frac{1}{2}$ cm **Stretch point:** $\frac{10}{3} = 3\frac{1}{3}$ cm

6. Check point: 0.6 cm **Stretch point:** 1.4 m

7. Check point: 243 m^2 **Stretch point:** 25 $6m^2$

8. Check point: $6.106 \times 10^6 = 6\ 106\ 000$

Stretch point: $16.176 \times 10^6 = 16\ 176\ 000\ m^2$

9. Check point: 1.4353 m **Stretch point:** 6.1644 m

10. Check point: $0.7264m^2$

Stretch point: (a) 0.00003844 units or 3.844×10^{-5}units

(b) 3.844×10^{-5} square units

11. Check point: 0.12083 **Stretch point:** 2.5534 m

12. Check point: 80 656 m^2 **Stretch point:** 2.496 x 10^{-5} m^2

13. Check point: 20.57 (4 s.f) **Stretch point:** 0.2093 (4 s.f)

1.9 Cubes and cube roots

1. Check point: 729 m^3 **Stretch point:** 337 5m^3

2.Check point: 0.027m^3 **Stretch point:** 563.6 m^3

3. Check point: 0.2 m **Stretch point:** 0.8 m

4. Check point: 2.669 cm (3 d.p) **Stretch point:** 1.6 699 = 1.67 units

5. Check point: 5832 m^3 **Stretch point:** 2.16 x 10^{-7} m^3

6. Check point: 5.667 m^3 (3 d.p) **Stretch point:** 1.13 m (2 d.p)

1.10 compound proportions and rates of work

1. Check point: Kurgart: KSh. 400 000, Wainaina: KSh. 160 000 and

Otieno: KSh. 240 000

Stretch point: Men were 180 and children were 400

2. Check point: 3:5:7 – 3 600 litres: 6 000 litres: 1 200 litres

Stretch point: KSh. 14 000: KSh. 21 000: KSh. 28 000

3. Check point: 30 **Stretch point:** y = 15

4. Check point: 8 cm

Stretch point: Charles KSh. 17 000

Joel KSh. 34 000

Ezekiel KSh. 68 000

5. Check point: 5:8:6 **Stretch point:** 120:105:7

6. Check point: $2\frac{1}{2}$ hours **Stretch point:** 2 days

7. check point: 600 tonnes **Stretch point:** 3 600 kg

8. Check point: 4 hours 48 minutes **Stretch point:** 2 hours 24 minutes

End of strand 1 Assessment

1. (a) Thousands **(b)** 4 000

2. 6

3. 20

4. 4 – hundredths

9- ten thousandths

5. 26^0C

6. 1:3:4

7. $6\frac{1}{4}\ m^2$

8. 3.779 cm

9. (a) 36 **(b)** 60

10. 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72